

### REMARKS

This is a full and timely response to the Office Action mailed August 11, 2004. Claims 5, 7-10, and 12-14 are now pending in the application. Claims 5 and 10 are the independent claims and have been amended. No new matter is believed to have been added. Reexamination and reconsideration in light of the foregoing amendments and following remarks is respectfully solicited.

#### I. Rejections Under 35 U.S.C. 102(b)

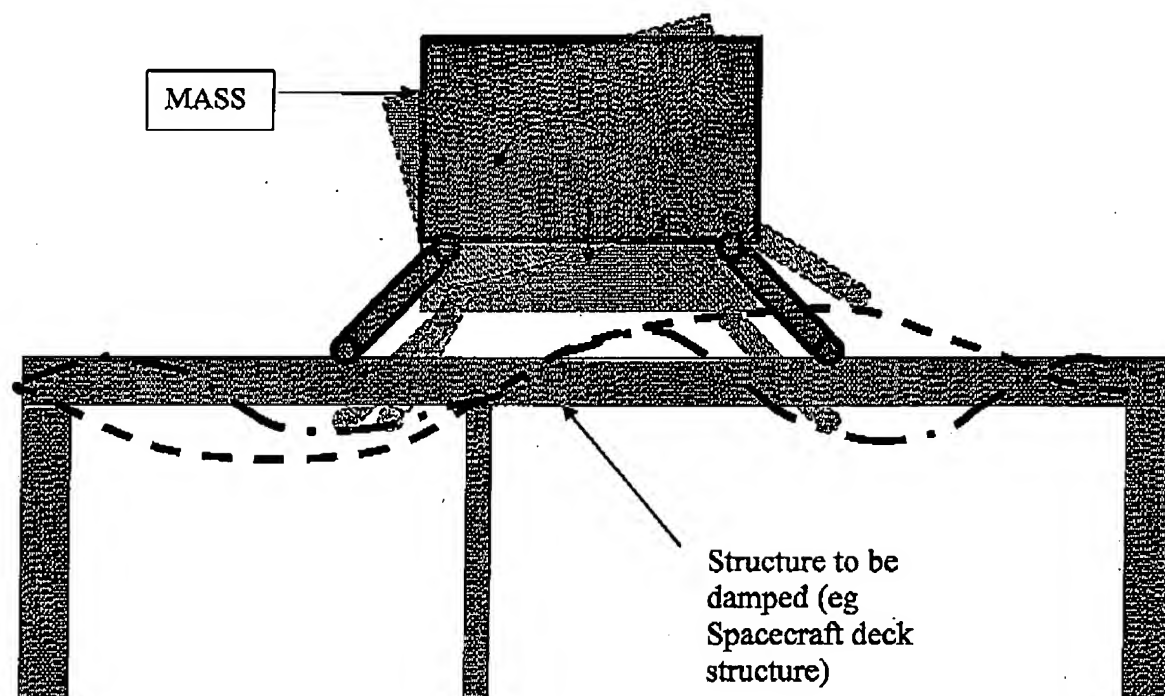
Claims 5, 7, 10, and 12 are rejected under 35 U.S.C. § 102 (b) as allegedly being anticipated by U.S. Patent No. 6,315,094 (Griffin et al.). The Applicant respectfully disagrees.

Claims 5 and 10 have been amended and now recite a mass damper having a structure that may experience vibrations at particular frequencies and at particular locations on the structure in six independent degrees of freedom and a plurality of isolators arranged in a hexapod configuration, each isolator having at least a first end and a second end, each isolator second end adapted to couple to a structure that may experience vibrations at particular frequencies and at particular locations on the structure in six independent degrees of freedom.

It is respectfully submitted and maintained that Griffin et al. does not disclose each and every element of at least newly amended independent claims 5 and 10. Specifically, nowhere does Griffin et al. disclose, teach, or mention a mass damper having a structure that may experience vibrations at particular frequencies and at particular locations on the structure in six independent degrees of freedom and a plurality of isolators arranged in a hexapod configuration, each isolator having at least a first end and a second end, each isolator second end adapted to couple to a structure that may experience vibrations at particular frequencies and at particular locations on the structure in six independent degrees of freedom, as recited in both claims 5 and 10.

By locating each isolator second end at particular locations on the structure, adjusting the stiffness and damping capability of each isolator at each of the particular locations, and adjusting the mass properties, numerous modes and mode shapes of realistic structures can be damped, such as shown in the illustration below. Here, two exemplary modes, Mode 1 and Mode 2, are damped by the particular locations of the isolators, two of which are shown, by adjusting the stiffness and damping capability of each isolator at each of the particular locations, and by adjusting the mass properties.

- . — . — . Mode 1 is damped by a first mode of the hexapod
- . — . — . Mode 2 is damped by a second mode of the hexapod



Griffin et al. does not teach this type of application. Instead, Griffin et al. teaches reducing a resonant response of a dependent and specific isolation system, not reducing a modal response of any structure.

Accordingly, as Griffin et al. fails to disclose, either explicitly or inherently, at least the above-noted element of claims 5 and 10 and the Examiner has failed to provide such an explicit or inherent disclosure of this element, it is respectfully submitted that the rejection of these claims and the claims that depend therefrom is improper and the Applicants request withdrawal of the § 102(b) rejection.

## II. Rejections Under 35 U.S.C. § 103

### A. Claims 8 and 13

Claims 8 and 13 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Griffin et al. in view of Cunningham et al. Claims 8 and 13 depend from and incorporate the features of independent Claims 5 and 10, respectively and thus, rely on the arguments presented above.

Furthermore, Cunningham et al. does not make up for the deficiencies of Griffin et al. Cunningham et al. relates to a system for isolating a supported structure from transmitting vibrations to a supporting base in a spacecraft that provides six degrees of freedom in a kinematic mounting. However, nothing in Cunningham et al. discloses or teaches a tuned mass damper having a structure that may experience vibrations at particular frequencies and at particular locations on the structure in six independent degrees of freedom and a plurality of isolators arranged in a hexapod configuration, each isolator having at least a first end and a second end, each isolator first end coupled to the mass and each isolator second end adapted to couple to a structure that may experience vibrations at particular frequencies and at particular locations on the structure in six independent degrees of freedom, as recited in independent Claims 5 and 10. Additionally, nowhere does Cunningham et al. or Griffin et al. disclose a tuned mass damper.

Therefore, reconsideration and withdrawal of the § 103 rejection is, therefore, respectfully requested.

B. Claim 9 and 14

Claims 9 and 14 were rejected under 35 U.S.C. 103 (a) as allegedly being unpatentable over Griffin et al. in view of Gran et al. Claims 9 and 14 also depend from and incorporate the features of independent Claims 5 and 10. Thus, claims 9 and 14 also rely on the arguments set forth above.

Additionally, Gran et al. does not make up for the deficiencies of Griffin et al. Gran et al. discloses a vibration isolation and precision pointing device for reducing vibrational disturbances on a payload platform which is subject to vibration transmitted from a base platform and to other possible vibrational disturbances applied directly to the payload itself or to the payload platform. However, Gran et al. does not disclose a tuned mass damper, as recited in both claims 9 and 14, nor does Gran et al. remotely disclose or suggest at least a mass damper having a structure that may experience vibrations at particular frequencies and at particular locations on the structure in six independent degrees of freedom and a plurality of isolators arranged in a hexapod configuration, each isolator having at least a first end and a second end, each isolator first end coupled to the mass and each isolator second end adapted to couple to a structure that may experience vibrations at particular frequencies and at particular locations on the structure in six independent degrees of freedom, as recited in independent Claims 5 and 10.

In view of the foregoing, reconsideration and withdrawal of each of the § 103 rejections is respectfully requested.

IV. Conclusion

Based on the above, the claims are patentable over the citations of record. The dependent claims are also submitted to be patentable for the reasons given above with respect to the independent claims and because each recite features which are patentable in its own right. Individual consideration of the dependent claims is respectfully solicited.

The other art of record is also not understood to disclose or suggest the inventive concept of the present invention as defined by the claims.

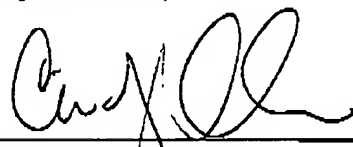
Hence, Applicant submits that the present application is in condition for allowance. Favorable reconsideration and withdrawal of the objections and rejections set forth in the above-noted Office Action, and an early Notice of Allowance are requested.

If the Examiner has any comments or suggestions that could place this application in even better form, the Examiner is requested to telephone the undersigned attorney at the below-listed number.

If for some reason Applicant has not paid a sufficient fee for this response, please consider this as authorization to charge Ingrassia, Fisher & Lorenz, Deposit Account No. 50-2091 for any fee which may be due.

Respectfully submitted,

Dated: October 25, 2004

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